REMARKS

In the office Action, the Examiner rejected Claims 1-5, 7-10 and 13-15, which are all of the pending claims, under 35 U.S.C. §112, first paragraph, on the grounds that the specification is not sufficiently enabling. Claim 14 was further rejected under 35 U.S.C. §112, second paragraph, as indefinite. None of the claims was rejected over the prior art.

In rejecting the claims, the Examiner questioned various limitations in Claims 1, 2, 3, 7, 13 and 14. Each of these is addressed below.

It maybe helpful, first, to discuss several item with respect to determining the difference between the local and program clock frequencies. For MPEG-2, the PCR is defined as the program clock value when it is received at the decoder. The STC is the local cock value. Thus the PCR and STC are MPEG-2 terms, while the program clock and local clock values are more generic terms. The difference between the local clock value and the program clock value is the difference between the STC and the PCR.

Determination of the local clock and program clock frequencies can be obtained using the previous and current STC and PCR values as follows.

(STC – previous STC)/(time elapsed) = local clock frequency

(PCR – previous PCR)/(time elapsed) = program clock frequency

time elapsed = (PCR – previous PCR) * 90Khz.

The 90KHz value is specified by the MPEG-2 standard as the unit for the PCR time stamps. The difference in frequency is then (program clock frequency – local clock frequency).

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With particular respect to Claim 1, the Examiner questioned whether the specification teaches the step of "determining the difference between the local and program clock frequencies, then adjusting the frequency at which the local clock oscillates so that the difference approaches zero." In particular, the Examiner questioned whether the specification teaches determining the difference between the local and program clock frequencies before the step of adjusting.

As the Examiner suggested, the difference between the local and program clock frequencies is determined by determining the difference between the PCR and the STC values, and the algorithm of Figure 9 shows that this is done before adjusting the frequency of the local clock.

In the Office Action, the Examiner noted that the left hand side of Figure 9 includes the step of "Calculate difference in clock rate (frequency) ," while the right hand side of Figure 9 includes the step of "Calculate difference in PCR and STC values." Both of these steps are used to calculate the difference between the program and local clock frequencies.

These steps are discussed in the specification from page 26, line 27 to page 27, line 16. There, it is explained that the difference between these two steps is that the step on the left uses previously stored STC and PCR values, while the step on the right uses recently received STC and PCR values. In both steps, however, the difference between the local and program clock frequencies are determined by determining the difference between STC and PCR values; and, moreover, both of these steps are done prior to adjusting the frequency at which the local clock oscillates.

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The procedure for adjusting the clock frequency is also discussed in the specification from page 25, line 29 to page 26, line 10. In this portion of the specification, it is explained that the clock difference is used to generate an output that, in turn, is used to regulate a voltage controlled oscillator. This oscillator is used to adjust the frequency of the local clock.

With regard to Claim 2, the Examiner asked, first, which portion of the specification teaches that the decoder receives the program clock signals, and second, which portion of the specification teaches determining the absolute difference between the local clock value and the program clock value.

The first of these issues is explained in the discussion of the MPEG 2 system on pages 4-6 of the application. In this portion of the specification, it is explained that the program clock recover (PCR) data, which is shown in Figure 2, is in the MPEG 2 bitstream, and that this bitstream is applied to decoder 301, shown in Figure 3. Control data, including the PCR data, are then applied to the system time clock generator, which includes the system time clock (STC). In addition, it is noted that Claim 2 of the application, as originally filed, includes the step of "receiving clock time stamps at the decoder which specify the program clock value and frequency." Accordingly, this step has a clear antecedent basis in the application.

With respect to the reference to the "absolute difference" between the local and program clock values, it is noted that this term is used in the specification on page 14, line 26. This "absolute difference" refers to the difference between the PCR time stamp and the system time clock, which is discussed on page 28, lines 4 and 5. The

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word "absolute" is used to distinguish this difference from the frequency difference between the local and program clock frequencies, which is also described in the claims.

Applicant also wishes to note that Claim 2 of the application as originally filed includes the step of "determining if there is an absolute difference between the local clock value and the program clock value." Thus, the use of the phrase "absolute value" also clearly has an antecedent basis in the application.

Regarding Claim 3, the Examiner asked that the Applicant indicate which portions of the specification:

i)   teaches the step of determining the difference between the local and program clock frequencies before the step of adjusting,

ii)   teaches that the decoder receives the program clock signals, and

iii)   teaches determining the absolute difference between the local cock value and the program clock value.

Each of these issues has been specifically addressed above, and it is not necessary to repeat that discussion.

In rejecting Claim 7 the Examiner objected to the limitation that the decoder receives the clock signals at a program clock frequency. Claim 7 is herein being amended to indicate that these received clock signals specify the program clock frequency.

The Examiner also asked, in connection with Claim 7, which portions of the specification teach:

i) means for determining the difference between the local and program clock frequencies before the means for adjusting, and

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ii) means for determining the absolute difference between the local and program clock values.

Each of these issues was specifically addressed above, and it is not necessary to repeat that discussion.

With respect to Claim 13, the Examiner here too asked which portion of the specification teaches means for determining the difference between the local and program clock frequencies before the means for adjusting. This issue has been discussed above, and it is not necessary to repeat that discussion here.

The Examiner rejected Claim 14, under 35 U.S.C. §112, second paragraph, on the grounds that there is insufficient antecedent basis in the claim for the "program clock value" in line 2. Claim 14 is herein being amended to introduce positively "a program clock value," in lines 1 and 2, and this provides the antecedent basis for the subsequent phrase "the local clock value."

Applicants' Attorneys have carefully reviewed all of the pending claims, and it is believed that the claims and the specification fully comply with the requirements of 35 U.S.C. §112. The Examiner is, accordingly, respectfully asked to reconsider and to withdraw the rejection of Claims 1-5, 7-10 and 13-15 under 35 U.S.C. §112, first paragraph, and the rejection of Claim 14 under 35 U.S.C. §112, second paragraph, and to allow Claims 1-5, 7-10 and 13-15.

Every effort has been made to place this application in condition for allowance, a notice of which is requested. If the Examiner believes that a telephone

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conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

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